

Express Mail No. EL897856634US

Title: METHOD AND APPARATUS FOR VIABLE AND NONVIABLE PROKARYOTIC AND EUKARYOTIC CELL QUANTITATION

Inventors: James E. Fleming et al. Docket No. 390054.402

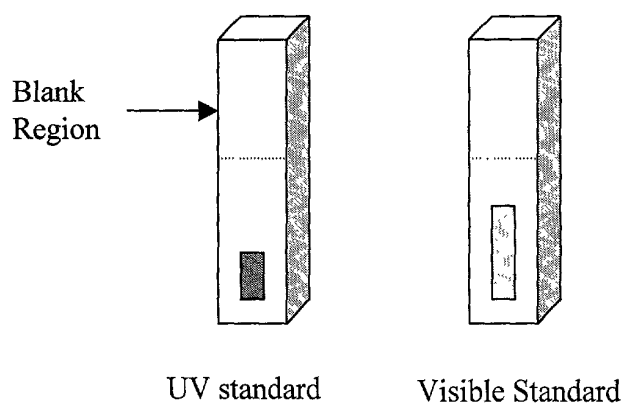


Fig. 1

An example of solid calibration standards for ultraviolet and visible wavelengths that can be used with the Turner Designs Hand-Held picofluor fluorometer.

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(cells/ml= Easy Count Reading X 154578 - 17131723)

Count Reading	Cells/ml
7000	1.1×10^9
6000	9.1×10^8
5000	7.6×10^8
4500	6.8×10^8
4000	6.0×10^8
3500	5.2×10^8
3000	4.5×10^8
2000	2.9×10^8
1000	1.4×10^8

Fig. 2

Example of a correlation using the invention to determine total cell counts. Cell counts were determined with the methylene blue technique.

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(Cells/ml= Easy Count Reading X 163343 - 26930879)

Easy Count Reading	Cells/ml
7000	1.1×10^9
6000	9.5×10^8
5000	7.9×10^8
4500	7.1×10^8
4000	6.3×10^8
3500	5.4×10^8
3000	4.6×10^8
2000	3.0×10^8
1000	1.4×10^8

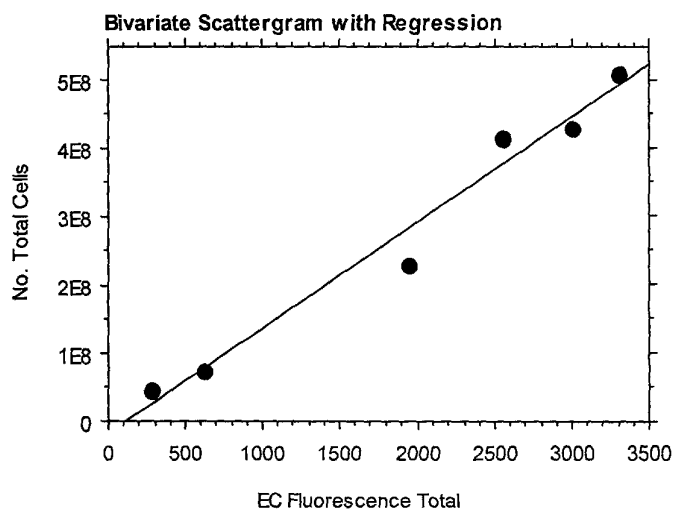
Fig. 3

Example of a correlation using the invention to determine live cell counts. Cell counts were determined with the methylene blue technique.

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No. Total Cells = -17131723.193 + 154578.054 * EC Fluorescence Total; $R^2 = .973$

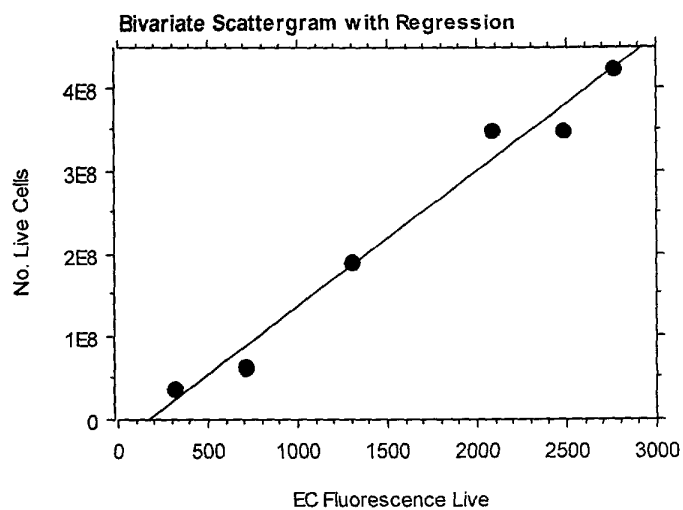
Fig. 4

Regression plot showing the relationship between Easy Count fluorescent readings and total cell concentrations of yeast as determined by the methylene blue method.

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$$\text{No. Live Cells} = -26930878.718 + 163342.859 * \text{EC Fluorescence Live}; R^2 = .977$$

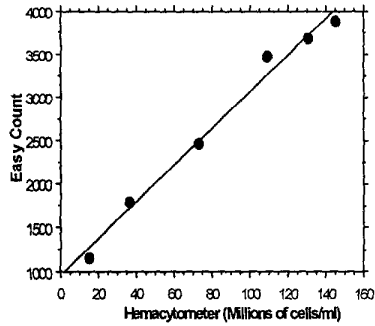
Fig. 5

Regression plot showing the relationship between Easy Count readings and viable cell concentrations of yeast as determined by the methylene blue method.

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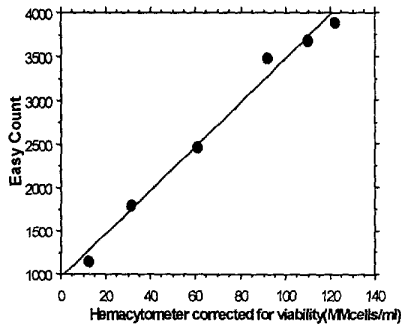
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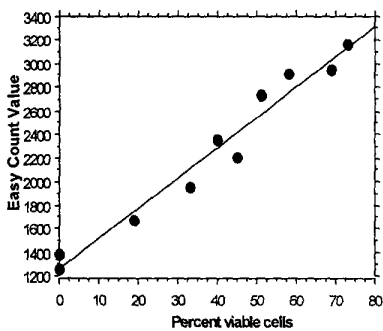
Easy Count = 956.111 + 21.157 * Hemacytometer (Millions of cells/ml); R² = .985

FIGURE 6



Easy Count = 958.81 + 25.098 * Hemacytometer corrected for viability (MMcells/ml); R² = .987

Figure 7



Easy Count Value = 1261.084 + 25.774 * Percent viable cells; R² = .962

Figure 8

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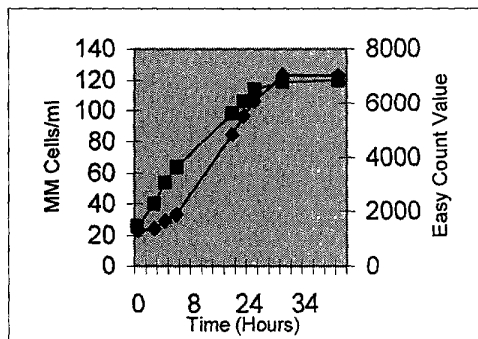


Figure 9

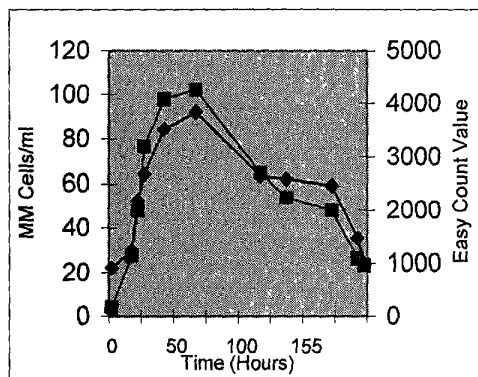


Figure 10

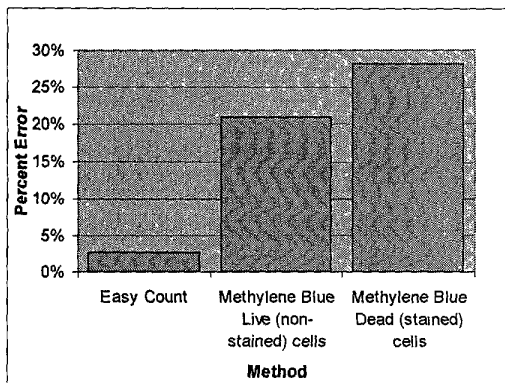


Figure 11